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The Neogene monsoon and oceanic currents in the Indian Ocean: The Maldives archipelago.

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New seismic data from the Maldives show that the Neogene of the Maldives carbonate edifice image large drift deposits. The stacking pattern of depositional sequences through the Lower to Middle Miocene traces variations of accommodation space, which are proposed to be primarily governed by fluctuations of relative sea level. During the late Middle Miocene, this system was replaced by a twofold configuration of bank development. Bank growth continued synchronously with partial bank drowning and associated deposition of giant sediment-drifts. Drowned banks show shapes attesting the occurrence of strong surface currents. Therefore, this turnover is attributed to the onset and/or intensification of oceanic currents and related upwelling. Drift sediments, characterized by offlapping geometries, formed as large-scale prograding complexes. Findings are not only expected to be applicable to other examples of Tertiary platforms in the Indo-Pacific region but also to other carbonate platforms in the geological record. Onset, type and variations of drift deposits in the platform edifice further provide not only a new and valuable proxy for the reconstruction of the oceanic currents around the Maldives but also for the development of the associated large-scale oceanographic current system with a world-wide impact. Additionally, the sedimentary record of the drift deposits may represent an excellent archive of the Indian monsoon history. The overall aim of an IODP drilling campaign thus would be to place the Maldives current system into the larger scale development of the global oceanographic current system by integrating results from other ODP and IODP expeditions like the south Atlantic or the Mediterranean outflow expedition.